

I claim:

1. A method for tinting the surface of a solid substrate such as a plastic sheet, or a coating, or a film, with a nanometer-sized, or a multi-nanometer-sized polyphenol, such as melanin, in which said solid substrate is:

- a) chemically etched to cause multi-nanometer-sized pores within a thin, several microns layer of the substrate but sufficiently small pore sizes to preclude visible light scatter;
- b) functionalized so as to react and bond with the said polyphenol, or melanin

2. A method for tinting the surface of a solid substrate, according to claim 1, in which the substrate is CR39.

3. A method for tinting the surface of a solid substrate, according to claim 1, in which the substrate is a polymer hard coating

4. A method for tinting the surface of a solid substrate, according to claim 1, in which the etching agent is sodium hydroxide.

5. A method for tinting the surface of a solid substrate, according to claim 1, in which the etching agent is accompanied by a phase transfer catalyst, such as tetrabutylammonium bromide or by the addition of hexanedi-amine or by the addition of domiphen bromide.